WHAT IS CLAIMED IS:

1. A surface contamination analyzer comprising

an electron beam radiating unit including an electron gun for radiating an electron beam along a certain path, and

a current measuring unit including a wall defining a chamber into which said certain path extends, a movable stage mounting a sample and moved so as to align a target region with said certain path and a current measuring equipment electrically connected between said sample and a constant voltage source for measuring the amount of current flowing out from said target region under the radiation of said electron beam onto said target region.

2. The surface contamination analyzer as set forth in claim 1, in which said movable stage is moved in a virtual plane perpendicular to said certain path.

3. The surface contamination analyzer as set forth in claim 1, in which said movable stage is moved in a virtual plane perpendicular to said certain path, and is inclined with respect to said virtual plane.

4. The surface contamination analyzer as set forth in claim 1, in which said electron beam radiating unit further includes an anode for creating an electric field for accelerating said electron beam, and the acceleration energy is variable.

5. The surface contamination analyzer as set forth in claim 4, in which said acceleration energy ranges from 1 eV to 10000 eV.

6. The surface contamination analyzer as set forth in claim 4, in which said electron beam radiating unit further includes an electron lens on said certain path so as to focus said electron beam to said target region.

7. The surface contamination analyzer as set forth in claim 6, in which said electron beam radiating unit radiates said electron beam at a beam current ranging between 1 pA and 1 nA.

8. The surface contamination analyzer as set forth in claim 1, in which said current measuring equipment accumulates the amount of current for a certain time period.

9. A method for investigating a degree of contamination on a target region of a contaminated sample, comprising the steps of:

a) aligning said target region of said contaminated sample with a path of an electron beam;

b) measuring the amount of current flowing out from said target region under radiation of said electron beam;

c) comparing said amount of current with the amount of reference current flowing out from a region of a reference sample corresponding to said contaminated sample for determining a difference between said amount of current measured and said amount of reference current; and

d) determining said degree of contamination on said target region on the basis of said difference.

10. The method as set forth in claim 9, in which said step b) includes the substeps of

b-1) adjusting an incident angle of said electron beam to a certain value.

b-2) measuring the amount of current flowing out from said target region under the radiation of said electron beam at said incident angle adjusted to said certain value,

b-3) changing said incident angle to another value,

b-4) measuring the amount of current flowing out from said target region under the radiation of said electron beam at said incident angle adjusted to said another value, and

b-5) repeating said sub-steps b-3) and b-4), if necessary, so that said degree of contamination is three-dimensionally determined for said target region in said step d).

11. The method as set forth in claim 9, further comprising the steps

e) evaporating certain contaminants from said target region after said step b), and

f) repeating said steps a) and b) for remaining contaminants before said step c).

12. The method as set forth in claim 11, in which said evaporation is carried out in a high temperature inert atmosphere.

13. The method as set forth in claim 11, in which said steps e) and f) are repeated for successively reducing the sorts of said remaining contaminants.

14. The method as set forth in claim 9, further comprising the steps of

e) changing an acceleration energy from the value in said step b) to another value after said step b);

f) repeating said step b) under the electron beam radiation at said another value before said step c).

15. The method as set forth in claim 14, in which said steps e) and f) are repeated at different values of said acceleration energy so that said degree of contamination is three-dimensionally determined for said target region in said step d).

16. A process for fabricating a semiconductor device, comprising the steps of:

a) treating said semiconductor water in an atmosphere potentially having an origin of contamination;

b) investigating a degree of contamination on said semiconductor wafer through sub-steps of

b-1) aligning a target region of said semiconductor wafer with a path of an electron beam,

b-2) measuring the amount of current flowing out from said target region under radiation of said electron beam,

b-3) comparing said amount of current with the amount of reference current flowing out from a region of a reference wafer corresponding to said semiconductor wafer for determining a difference between said amount of current measured and said amount of reference current, and

b-4) determining said degree of contamination on said semiconductor wafer on the basis of said difference;

c) evaluating said degree of contamination to see whether or not a cleaning is required for said semiconductor wafer;

d) decontaminating said semiconductor wafer when the answer at step c) is given affirmative; and

e) treating said semiconductor wafer in another next atmosphere.

17. The process as set forth in claim 16, in which said step b-2) includes the sub-steps of

b-2-1) adjusting an incident angle of said electron beam to a certain value.

b-2-2) measuring the amount of current flowing out from said target region under the radiation of said electron beam at said incident angle adjusted to said certain value,

b-2-3) changing said incident angle to another value,

b-2-4) measuring the amount of current flowing out from said target region under the radiation of said electron beam at said incident angle adjusted to said another value, and

b-2-5) repeating said sub-steps b-2-3) and b-2-4), if necessary, so that said degree of contamination is three-dimensionally determined for said target region in said step b-4).

18. The method as set forth in claim 16, in which said step b) further includes the sub-steps

b-5) evaporating certain contaminants from said target region after said step b-2), and

b-6) repeating said steps b-1) and b-2) for remaining contaminants before said step b-3).

19. The method as set forth in claim 18, in which said evaporation is carried out in a high temperature inert atmosphere.

20. The method as set forth in claim 16, in which said step b) further includes the sub-steps of

b-5) changing an acceleration energy from the value in said step b-2) to another value after said step b-2);

b-6) repeating said step b-2) under the electron beam radiation at said another value before said step b-3).

21. The method as set forth in claim 20, in which said steps b-5) and b-6) are repeated at different values of said acceleration energy so that said degree of contamination is three-dimensionally determined for said target region in said step b-4).